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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ken Utagawa

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EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT

PAPER NUMBER

2622

NOTIFICATION DATE

DELIVERY MODE

04/16/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/656,726	Applicant(s) UTAGAWA, KEN	
	Examiner LUONG T. NGUYEN	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-28 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31 is/are allowed.
- 6) ☒ Claim(s) 20-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species VII, Figure 29, in the reply filed on 02/07/2007 is acknowledged.

Response to Arguments

2. Applicant's arguments filed on 12/16/2009 have been fully considered but they are not persuasive.

Applicant stated that claim 20 is amended to overcome the Office Action's rejection under 35 U.S.C. § 112, first paragraph. Support for the amendment of claim 20 can be found in Applicant's specification, for example, at page 42, line 20-page 44, line 9 and Fig. 22.

In response, regarding claim 20, the Applicant amended claim 20 by canceled the limitation which was not described in the specification to overcome the Office Action's rejection under 35 U.S.C. § 112, first paragraph; and added new limitation "a direction of a grid pattern of sampling points in the grid imaging mode and a direction of a grid pattern of sampling points in the diagonal grid imaging mode are different from each other." The Examiner considers that claim 20 as amended still does not distinguish from Glenn reference or Esser et al. reference.

Glenn discloses a single sensor electronic video camera, which includes a CCD image sensor 60, which reads on limitation "a plurality of photosensors included in one image sensor and two-dimensionally arranged on a light-receiving surface," see figures 1-5, column 2, lines 23-57; column 3, lines 7-20.

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In Glenn, figures 2-3 show an image sensor 60 in grid mode, in which red or blue is sampled in horizontal or vertical direction, see column 2, lines 30-40. Figures 4-5 show an image sensor 60 in diagonal grid mode, in which red or blue or green is sampled in diagonal direction, see column 3, lines 22-30). This disclosure reads on new limitation “a direction of a grid pattern of sampling points in the grid imaging mode and a direction of a grid pattern of sampling points in the diagonal grid imaging mode are different from each other”.

Applicant stated that support for the amendment of claim 20 can be found in Applicant's specification, for example, at page 42, line 20-page 44, line 9 and Fig. 22.

The examiner respectfully disagree since specification, page 42, line 20-page 44, line 9 and Fig. 22 support figures 21-22, which is a non-elected Species. However, support for the amendment of claim 20 can be found in Applicant's specification, at page 55, line 4-page 56, line 15 and Figs. 29, 30A, 30B, which is an elected Species.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Glenn (US 7,230,646).

Regarding claim 20, Glenn discloses an imaging device comprising:

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a plurality of photosensors included in one image sensor and two-dimensionally arranged on a light-receiving surface (an image sensor 60 included in a single sensor electronic camera, figures 1-3, column 2, lines 14-67), for generating photo signals in accordance with an amount of received light;

a readout section reading out the generated photo signals (a read out reading section is included in image sensor 60 for reading out the image signals), wherein:

said readout section selectively has a grid imaging mode (figures 2-3 show image sensor 60 in grid mode, column 2, lines 30-67) in which the generated photo signals on the light-receiving surface are sampled in a grid pattern for readout, and a diagonal grid imaging mode (figures 4-5 show image sensor 60 in diagonal grid mode, column 3, lines 7-30) in which the generated photo signals on the light-receiving surface are sampled in a diagonal grid pattern for readout;

a direction of a grid pattern of sampling points in the grid imaging mode and a direction of a grid pattern of sampling points in the diagonal grid imaging mode are different from each other (figures 2-3 show an image sensor 60 in grid mode, in which red or blue is sampled in horizontal or vertical direction, see column 2, lines 30-40; figures 4-5 show an image sensor 60 in diagonal grid mode, in which red or blue or green is sampled in diagonal direction, see column 3, lines 22-30; this shows the direction of grid imaging mode and diagonal grid imaging mode are different from each other).

5. Claims 20, 21, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Esser et al. (US 4,799,109).

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a plurality of photosensors included in one image sensor and two-dimensionally arranged on a light-receiving surface (image sensor 1, figures 1-2, column 3, lines 20-67), for generating photo signals in accordance with an amount of received light;

a readout section (reading means 9, figure 2, column 4, lines 1-4) reading out the generated photo signals,

wherein said readout section selectively has a grid imaging mode (figure 9 shows image sensor 1 in grid mode, column 7, lines 1-50) in which the generated photo signals on the light-receiving surface are sampled in a grid pattern for readout, and a diagonal grid imaging mode (figure 10 shows image sensor 1 in diagonal grid mode, column 7, lines 50-67) in which the generated photo signals on the light-receiving surface are sampled in a diagonal grid pattern for readout;

a direction of a grid pattern of sampling points in the grid imaging mode and a direction of a grid pattern of sampling points in the diagonal grid imaging mode are different from each other (figure 9 shows image sensor 1 in grid mode, in which direction is in horizontal or vertical, column 7, lines 1-50; figure 10 shows image sensor 1 in diagonal grid mode, in which the direction is in diagonal, column 7, lines 50-67).

Regarding claims 21, 25, Esser et al. discloses wherein:

said plurality of photosensors are arranged in a grid pattern on the light-receiving surface (figure 9); and

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in the diagonal grid imaging mode said readout section adds up the photo signals for readout in each area around a crosspoint of the diagonal grid pattern (figure 10, the pixels in lines 3 and 4 are read together, column 7, lines 50-65).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 22, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable Esser et al. (US 4,799,109 in view of Gallagher et al. (US 6,765,611).

Regarding claims 22 and 26, Esser et al. fails to specifically disclose an optical low pass filter disposed on the light-receiving surface, for blurring an optical image in a direction substantially perpendicular to an adding-up direction of the photo signals. However, Gallagher et al. teaches an optical low pass filter 6, which is placed between lens and image sensing device 10, performs a slight blurring of the imaged light (figure 1, column 4, lines 19-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Esser et al. by the teaching of Gallagher et al. in order to reduce the occurrence of alising (column 4, lines 20-25).

8. Claims 23, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable Esser et al. (US 4,799,109 in view of Morris et al. (US 6,665,010).

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Regarding claims 23, 27, Esser et al. fails to specifically disclose a color filter array disposed on the light-receiving surface such that the photosensors in each unit of the adding-up substantially have a same color. However, Morris et al. teaches an imager 140, which is spatially divided into multiple (four, for example) groups 113 (groups 113a, 113b, 113c, 113d), one group 113 may be associated with red color and one group 113 may be associated with a green pixel color (figure 5, column 3, lines 5-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Esser et al. by the teaching of Morris et al. in order to independently control integration times for different groups of pixels sensing unit that optimizes the dynamic range of the captured image (column 3, lines 25-30).

9. Claims 24, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable Esser et al. (US 4,799,109 in view of Tanaka (US 6,982,751).

Regarding claims 24, 28, Esser et al. fails to specifically disclose a color filter array disposed on the light-receiving surface such that the photosensors in each unit of the adding-up have different colors from each other. However, Tanaka discloses a solid-state imaging apparatus and its driving method in which the signal charges read for every 2 pixels are added in the vertical transfer block 53 have different colors from each other (figure 14, column 16, lines 14-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Esser et al. by the teaching of Tanaka in order to provide a CCD imaging device that can be operated in the two modes of the frame read mode

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and the special read mode (column 16, lines 33-45).

Allowable Subject Matter

10. Claim 31 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 31, see Examiner's statement of reasons for the indication of allowable subject matter as indicated in Paper mailed on 05/03/2007.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LUONG T NGUYEN/
Primary Examiner, Art Unit 2622
04/09/10